# PRIVATIZING PUBLIC SERVICES WITH EXTERNALITIES: WATER AND WASTEWATER SYSTEMS

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Privatizing water and wastewater systems is fundamentally different to services such as electricity due to the prevalence of externalities. This paper discusses possible methods of improving incentives without full privatization. The discussion provides a crude framework containing the contrasting recommendations of recent papers on the subject.

## 1. Problems with public ownership and management

Publicly owned and publicly managed water utilities are thought to incur excessive costs of construction, procurement, and operation; over-utilize debt and overcapitalize; under-innovate; under-charge; and favor politically influential groups (Beecher, 1995 and 1999). Ironically, while environmental concerns are often cited as a justification for public intervention, the high costs that environmental regulations impose are often the straw that breaks the back of public water management (Moore, 1999). Moreover, the empirical trend towards deregulation and privatization cannot be ignored.

## 2. Privatization options: contracting vs. private ownership

There was an apparent consensus among the authors that "privatization" is a rather vague characterization of several institutional alternatives to public management. Private ownership with public regulation of rates and charges, the historical standard for other public utilities, was not seriously considered by any of the authors. Even industries such as electric power and telecommunications, where the regulated natural monopoly approach once was the norm, are being deregulated. The two forms of privatization that are most relevant to water and wastewater systems are public ownership, with private management effected via competitive contracts, and private ownership.

### 2.1 Contracting for private management

In the contracts model, the city or state government retains ownership of the water facilities and tenders contracts to private companies for the management thereof. As explained by Beecher, the contracting process must contain a number of safeguards in order to be protective of the interests of the principal (typically a unit of local government), including a well-designed process of competitive bidding, incentive-based compensation along with measurable performance targets, and a procedure for complying with state and federal regulations.

The contracting model has a number of potential problems of its own, however. The one receiving the most attention in the sessions was the length of the contractual relationship.

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Moore posits that the reason for the empirical trend towards longer-term contracts is efficiency. For example, long-term contracts allow management to accommodate full employment obligations (for the existing employees) without substantial loss in profits. They likewise motivate private investment and appear to lead to greater cost savings. Beecher points out, however, that long-term contracts diminish competition, leading to *de facto* monopoly, and the cost-savings of privatization redound to the private company not the rate-paying public.

Because the nature of water resources and the needs of water consumers vary across communities and because there is not an extensive history of private water contracting, there is not a well-developed menu of best practices from which communities can draw when designing contractual mechanisms suitable for their individual situations. Those designing said contracts face an inevitable tradeoff. If they try to specify every possible performance measure and every contingency, the contract will be too complex, too expensive to design and too difficult to monitor. If they try to simplify the contract, the concessionaire or franchisee will be motivated to stint on the unspecified and unmeasured (or poorly measured) objectives.

A long-term partnership between local government and a private company, as envisioned by Moore, may indeed succeed if the local government partners with a "win-win" oriented company which believes that its long-term interests are aligned with improved and more economical customer service. The risk remains, however, that the company will behave opportunistically instead, seeking opportunities to exploit its insider position to "hold-up" the customers for higher rates.

A research challenge is to find a mechanism for exploiting the benefits of long-term partnership, while simultaneously exploiting the discipline of competition. One possibility is to empower an "accountability" agency to compare the performance of private companies across communities. Such comparisons would not be trivial exercises. They should include not only multiple performance characteristics but the nature of the water resources at hand, as well as an estimate of the "first-best" efficient solution for each situation.

Another challenge is to provide an appropriate conceptual framework for extracting normative lessons from the contracting experiences of various communities. Key to this endeavor would be discerning between situations wherein the local government:

a) successfully designs company-selection and incentive mechanisms that improve the quality of service (including environmental standards) and lower financial costs facing tax and rate-payers,
b) attempts to achieve the above outcomes only to find that the private contractor has exploited its insider-advantage for higher profits and failed to achieve the objectives, and
c) actively or passively colludes with the private company in the pursuit of mutual gains that do not benefit the ostensible beneficiaries of privatization. Instances of this category include the exploitation of perverse tax laws (see below) and the use of the

contracting mechanism to exploit implicit loopholes in the public-utility regulatory commissions of many states (Beecher).

2.2 Private ownership

One solution to the agency problems discussed above is to unify the principal (owner) and agent (contractor) through private ownership. This solution creates the need for increased regulation, however, because the owner is a monopolist and does not automatically seek to serve the public interest. Regulation, in turn, brings some of the same problems of public ownership and management, including overcapitalization and the politicization of the public utility.

This dilemma poses another research challenge, namely whether and how water and wastewater services can be effectively deregulated. Direct imitation of deregulation in the electric power and/or telecommunications sectors is clearly not feasible. Whether a deregulation option will emerge that is appropriate to the water sector remains to be seen.

## 3. Public ownership, private efficiency

Some of these reforms may be accomplished while retaining public ownership and management. Edward Bailey described how Colorado Springs reorganized its water and wastewater treatment services in order to achieve many of the same objectives of privatization. In this model, Colorado Springs Utilities (CSU) is citizen-owned and operated. CSU's human resources are provided by the government Water Resources Department. While the new organization is public in nature, it has apparently adapted an incentive system not dissimilar from those used by long-term private concessionaires and achieved substantial cost savings and other efficiency gains. Moreover, its charter provides an independence that is unlike ordinary line agencies of government.

Manning and Mason described the approach that their management consulting teams use to effect efficiency gains in both publicly owned and privately owned but publicly regulated public utilities. They see both as monopolies whose isolation from competition has led to similar bureaucratization and stagnation of operations.

Both of these papers emphasize how a culture shift is needed before old habits and procedures can be discarded; they also provide details on the nature of thought patterns that need to be changed. Some of the discussion of these papers implicitly questioned the transferability of this experience. Charismatic leaders can perhaps transform public agencies. One would think, however, that transforming the governance structure such that the new culture and thinking are effectively incentivized would have a greater chance of success.

## 4. Summary and conclusions

Privatization is not a panacea that can instantly cure the myriad inefficiencies of public ownership and management. First of all, privatization could take many forms. Secondly,

the two most popular forms of privatizing water systems – contracting and private ownership -- have a number of potential disadvantages.

Nonetheless, the inefficiencies of the traditional publicly-owned-and-managed approach to water system organization are large and compelling enough that the current restructuring trend is expected to continue. There is neither adequate theory nor evidence to resolve the question of whether restructuring should or will take the form of private ownership, whether incentive compatible contract mechanisms can be devised to render public ownership/private management a superior organizational form, or whether a leaner and more efficient incentive structure can adequately improve on public management to make it the dominant approach. It appears that different communities will continue to opt for different approaches to increased efficiency according to their different economic and political circumstances.

To some extent the long-term-contract organizational form, with ownership staying with a unit of local government, is emerging as the pre-eminent type of privatization in the water industry. This contrasts starkly with the movement in other public utilities towards private ownership with competition provided by deregulation. There are two apparent reasons why this movement has not taken off in the water industry. First, perverse tax laws penalize private ownership. Second, the technological nature of the water industry may be resistant to competition through deregulation.

Among the policy conclusions and recommendations to emerge from this apparent contrast is to reform the tax laws that may be inhibiting the evolution of private ownership. In addition, increased understanding is needed of whether technological idiosyncrasies of the water industry account for the apparent failure of the deregulation movement so prominent in electric power and telecommunications. To the extent that competition among water service providers in a single market is not technologically desirable, alternative mechanisms of providing competition are needed. One such institutional innovation would be to develop a federation among communities whereby the performance of various water-service providers could be compared. This would induce competition among providers to enhance their performance ratings both to retain their existing contracts and to obtain contracts in new markets.

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